



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/468,668	12/21/1999	JAMES A. KWEEDER	30-4874	3902

7590 06/18/2002

MELANIE L BROWN
HONEYWELL INTERNATIONAL INC
15801 WOODS EDGE ROAD
COLONIAL HEIGHTS, VA 23834

EXAMINER

MADSEN, ROBERT A

ART UNIT	PAPER NUMBER
----------	--------------

1761

DATE MAILED: 06/18/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/468,668

Applicant(s) **AFG**

KWEEDER ET AL.

Examiner

Robert Madsen

Art Unit

1761

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 11-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 14-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Acknowledgement is made of receipt of the Amendment filed March 27, 2002. Accordingly, claims 14-17 have been added. Claims 1-17 are currently pending in the application. Claims 11-13 are withdrawn from further consideration as being drawn to a non-elected invention in Paper No. 3.

Specification

The amendment filed March 27, 2002 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: mechanically agitating the shear-thinnable mixture at a rate of at least 200 revolutions per minute (Lines 5 and 6 of the amended paragraph bridging pages 4 and 5 of the specification). The original disclosure states " ...200 rpm...provides sufficient shear..." (Page 4, lines 26-29) and individual speeds greater than 200 rpm (Examples), not at least 200 rpm. Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

Claims 14-17 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claims 14-17 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In the original disclosure applicant does not provide support for agitating at a rate at least 200 rpm, as included in amended claims 1 and 7. The original disclosure only states “ ...200 rpm...provides sufficient shear...” (Page 4, lines 26-29) and individual speeds greater than 200 rpm (Examples), not at least 200 rpm.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuka et al. (US 3539326) in view of Frenken et al. (US 3988398) and Hoogendonk (US 3083406).

Regarding claims 1,2,4,5,7,9, and 10, Otsuka et al. teach a method of prilling a viscous molten mixture (e.g. an NPK fertilizer) of 1-2% moisture, as recited in claims 2,4, and 9, comprising the steps of providing a molten first component (e.g. ammonium nitrate), mixing at least a second component to with the first (e.g. phosphorous and/or potassium salts), reacting the components to form a mixture at a particular temperature and time (see especially Examples for time/temp combination), additionally combining micronutrients as recited in claims 5 and 10 (i.e. Introducing calcium and magnesium values in Column 5, lines 43-53), and forming prills by centrifugal force (Column 7, line 19 to Column 8, line 34, Examples) . Otsuka et al. recognizes the viscosity problems associated with NPK fertilizer melts and provides the mechanical agitation to assist in forming prills (i.e. the mixture is under constant agitation prior to forming prills) and acknowledge that forming prills by spraying (i.e. flowing a mixture through holes) is not possible (Column 1, lines 18-60). Thus Otsuka et al. are silent in teaching the use of a prill head with holes, as recited in claims 1 and 7, and wiping the prill head surface with blades, as recited in claim 7. Furthermore, although Otsuka et al. teach the molten NPK viscosity causes the prilling problem and solves the problem by adding constant agitation, Otsuka et al. are silent in describing the melt as being shear thinning per se, as recited in claims 1 and 7.

Frenken et al. recognizes the same problem as Otsuka et al.: it is notoriously well known that molten NPK fertilizer has a viscosity that causes problems in prilling processes. Like, Otsuka et al., Frenken et al. also teach providing sufficient mechanical agitation during the prilling process as a solution.

However, Frenken et al. teach a solution to the problem of spraying (i.e. using a prill head) by providing mechanical agitation in the form of blades wiping the surface of the prill head at a rate of anywhere from 300-2000 rpm, inside a prill head to influence the centrifugal pressure of the molten NPK fertilizer and assist in mixture flow (Abstract, Column 1, lines 16-60, Column 1, line 63 to Column 2, line 67, Column 3, line 37 to Column 4, line 4, Figure 1, 2).

Hoogendonk is relied on, not only as further evidence of the providing mechanical agitation with a prill head to permit molten NPK fertilizer to flow through holes in a prill head, *but* that the thixotropic (i.e. shear thinning) characteristics of molten NPK fertilizers cause the viscosity problems cited by Otsuka et al. and Frenken et al. (Column 1, line 9 to Column 2, line 45, Figures)

Therefore, it would have been obvious to modify the method of Otsuka et al. and include mechanical agitating inside a prill head using blades that scrape the surface of the prill head at speeds of at least 200 rpm to permit flow through the holes since this solves the problem recognized by Otsuka et al. (i.e. spraying molten NPK fertilizers) and one would have been substituting one method of prilling an NPK fertilizer for another.

Regarding claims 3 and 8, Otsuka et al. teaches ammonium sulfate may be added to a melt solution of ammonium nitrate (Column 5, lines 43-53).

Regarding claim 6, Otsuka et al. are silent in teaching rotating a prilling bucket with a stationary blade, stationary bucket with a rotating blade or a pressurized nozzle. As discussed above in the rejection of claims 1 and 7, Hoogendonk teaches providing mechanical agitation with a prill head to permit

an NPK molten fertilizer mixture to flow through holes in the prill head. However, not only does Hoogendonk teach the rotating flat- surface prill head with the rotating blades of Frenken et al. , but Hoogendonk et al. alternatively teaches a rotating grooved-surface prill head with a stationary blade (Column 2, lines 14-45, Figure 2). Therefore, it would have been obvious to modify the method of Otsuka et al. and use a rotating grooved-surface prill head and a stationary blade, since one would have been substituting one method of prilling NPK fertilizers for another.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Barclay (GB 1049782), Chappell (GB 1119702), and Stengel (US 3021207) teach compositions of ASN and melt temperatures.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is


filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Madsen whose telephone number is (703)305-0068. The examiner can normally be reached on 7:00AM-3:30PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (703)308-3959. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9310 for regular communications and (703)872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-0061.

Robert Madsen
Examiner
Art Unit 1761
June 11, 2002



MILTON I. CANO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700